03050104-020

(Big Wateree Creek)

General Description

Watershed 03050104-020 is located in Fairfield County and consists primarily of ***Big Wateree Creek*** and its tributaries. The watershed occupies 37,434 acres of the Piedmont region of South Carolina. The predominant soil types consist of an association of the Wilkes-Winnsboro series. The erodibility of the soil (K) averages 0.24 and the slope of the terrain averages 15%, with a range of 2-40%. Land use/land cover in the watershed includes: 85.9% forested land, 6.8% agricultural land, 6.1% scrub/shrub land, 0.8% urban land, 0.3% water, and 0.1% barren land.

Big Wateree Creek accepts the drainage of Wall Creek, Willow Swamp Branch, Gaydens Creek, Scabber Branch, and Hogfork Branch before forming an arm of Lake Wateree. There are a total of 96.2 stream miles and 88.6 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
CW-072	W/INT	FW	BIG WATEREE CREEK AT US 21

Big Wateree Creek (CW-072) - Aquatic life uses are partially supported due to dissolved oxygen and pH excursions. Significant decreasing trends in five-day biochemical oxygen demand and turbidity suggest improving conditions for these parameters. Recreational uses are not supported due to fecal coliform bacteria excursions.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM / ***FACILITY NAME*** / ***PERMITTED FLOW @ PIPE (MGD)***	***NPDES#*** / ***TYPE*** / ***COMMENT***
BIG WATEREE CREEK WHITE OAK CONFERENCE CENTER PIPE #: 001 FLOW: 0.0495	SC0035980 MINOR DOMESTIC

Growth Potential

There is a low potential for growth in this rural watershed. I-77 and S.C. Hwy. 200 cross near the center of the watershed and some commercial/industrial growth may occur around the intersection. The only water and sewer service is available along S.C. Hwy. 200 from the Town of Winnsboro to I-77. Another area of minor growth is the Blackstock area north of Winnsboro on U.S. Hwy. 321.

Watershed Protection and Restoration

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for ***Big Wateree Creek*** (CW-072) for violations of the fecal coliform bacteria and turbidity standards. The primary sources of fecal coliform to the stream were runoff from agricultural activities, cattle-in-stream, and failing septic systems. The TMDL states that an 80% reduction in fecal coliform loading from agricultural sources is necessary for the stream to meet the recreational use standard. The probable sources of turbidity in the stream are the resuspension of sediment in the streambed and bank erosion. Because turbidity is not a concentration and therefore cannot be expressed as a load, total suspended solids (TSS) was used as a surrogate. The TMDL states that a 70% reduction in TSS loading is necessary for the stream to meet the aquatic life use standard. Implementation of the Big Wateree Creek fecal coliform TMDL should bring about the reductions necessary to improve water quality for turbidity also. For more details on TMDLs, please visit the SCDHEC's Bureau of Water homepage at http://www.scdhec.gov/water and click on "Watersheds and TMDLs" and then "TMDL Program".

Special Projects

TMDL Implementation for Fecal Coliform and Turbidity in the Big Wateree Creek Watershed

The targeted area in the Big Wateree Creek Watershed involves the waters above sampling station CW-072, and has been documented by SCDHEC as violating the water quality standard for fecal coliform bacteria and turbidity. Total Maximum Daily Loads (TMDLs) have since been developed and approved for this area for both parameters of concern. Based on guidelines set by SCDHEC, the objective of this project is to lower fecal coliform and turbidity loading, attainable within the allotted 319 funding, by 80% and 70%, respectively, so that water quality standards are attained. The project will work to obtain this goal by educating local landowners about sources of fecal coliform and turbidity loading and implementing Best Management Practices (BMPs) within the area of concern.

NPS Assessment and TMDL for Phosphorus in the Catawba River Basin

In June 2003, researchers at the University of South Carolina completed a §319-funded study of nutrient loading in the lower Catawba River basin using the WARMF (Watershed Analysis Risk Management Framework) water quality model. The model estimated that the lower Catawba (defined as the Catawba River downstream of the Lake Wylie dam and all tributaries through Lake Wateree) received an average load of 2100 kg/day of phosphorus for the 1996-1998 study period. Of this load, 46% was from point sources, 39% was from nonpoint sources, and 15% was from Lake Wylie. SCDHEC is currently using the WARMF model, which is being updated through 2003, to further refine nonpoint sources, to determine loading rates that would allow the reservoirs to meet the phosphorus standard (TMDLs), and to calculate wasteload allocations for phosphorus for the impaired reservoirs. Cooperators in the study include Catawba River stakeholders, North Carolina DWQ, and EPA Region 4.